

Translation

PATENT COOPERATION TREATY

PCT/JP2004/007613



PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY  
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PCT2004KP114	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/JP2004/007613	International filing date (day/month/year) 02 June 2004 (02.06.2004)	Priority date (day/month/year) 05 June 2003 (05.06.2003)
International Patent Classification (IPC) or national classification and IPC H01Q 13/02, 15/23, 19/06, 19/10		
Applicant SUMITOMO ELECTRIC INDUSTRIES, LTD.		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

3. This report is also accompanied by ANNEXES, comprising:

a. ☒ (sent to the applicant and to the International Bureau) a total of 9 sheets, as follows:

☒ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).

☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) \_\_\_\_\_, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

☒ Box No. I Basis of the report

☐ Box No. II Priority

☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

☐ Box No. IV Lack of unity of invention

☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

☒ Box No. VI Certain documents cited

☐ Box No. VII Certain defects in the international application

☐ Box No. VIII Certain observations on the international application

Date of submission of the demand 18 November 2004 (18.11.2004)	Date of completion of this report 19 April 2005 (19.04.2005)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

# INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

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## Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☐ This report is based on translations from the original language into the following language \_\_\_\_\_, which is language of a translation furnished for the purpose of:
- ☐ international search (under Rules 12.3 and 23.1(b))
- ☐ publication of the international application (under Rule 12.4)
- ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

- ☐ The international application as originally filed/furnished
- ☒ the description:
- pages \_\_\_\_\_ 1-3, 10 \_\_\_\_\_, as originally filed/furnished
- pages\* \_\_\_\_\_ 4-9/1 \_\_\_\_\_ received by this Authority on \_\_\_\_\_ 18 November 2004 (18.11.2004)
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☒ the claims:
- pages \_\_\_\_\_ 3, 4, 6 \_\_\_\_\_, as originally filed/furnished
- pages\* \_\_\_\_\_, as amended (together with any statement) under Article 19
- pages\* \_\_\_\_\_ 1, 2, 7, 8 \_\_\_\_\_ received by this Authority on \_\_\_\_\_ 18 November 2004 (18.11.2004)
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☒ the drawings:
- pages \_\_\_\_\_ 1-15 \_\_\_\_\_, as originally filed/furnished
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☒ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☒ the claims, Nos. \_\_\_\_\_ 5, 9, 10 \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims	1-4, 6-8	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1-4, 6-8	NO
Industrial applicability (IA)	Claims	1-4, 6-8	YES
	Claims		NO

**2. Citations and explanations (Rule 70.7)**

- Document 1: WO, 2003/30303, A1 (Sumitomo Electric Industries, Ltd.), April 11, 2003 (04.11.03), Full text, Figs. 1-25 & JP, 2003-110349, A & JP, 2003-110350, A & JP, 2003-110352, A
- Document 2: JP, 10-163730, A (Murata MFG. Co., Ltd.), June 19, 1998 (06.19.98), Full text, Figs. 1-11 (Family: none)
- Document 3: JP, 2002-232230, A (Toshiba Corporation), August 16, 2002 (08.16.02), Full text, Figs. 1-10 (Family: none)
- Document 4: JP, 6-504659, A (Thomson Consumer Electronics S.A.), May 26, 1994 (05.26.94), Full text, Figs. 1-3 & WO, 92/13373, A1 & EP, 569390, A
- Document 5: JP, 11-27037, A (Nippon Antenna K.K.), January 29, 1999 (01.29.99), Full text, Figs. 1-11 (Family: none)
- Document 6: JP, 2001-284950, A (ALPS Electric Co., Ltd.), October 12, 2001 (10.12.01), Full text, Figs. 1-7 & JP, 2001-284956, A & EP, 1139489, A1 & US, 6580400, B2
- Document 7: US, 4468672, A (Bell Telephone Laboratories, Incorporated), August 28, 1984 (08.28.84), Full text, Figs. 3 and 4 & US, 4482899, A & WO, 83/1711, A & JP, 58-501851, A

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

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## Box No. VI Certain documents cited

## 1. Certain published documents (Rule 70.10)

Application No. Patent No.	Publication date (day/month/year)	Filing date (day/month/year)	Priority date (valid claim) (day/month/year)
JP 2004-304659 A [E, X]	28.10.2004	31.03.2003	

## 2. Non-written disclosures (Rule 70.9)

Kind of non-written disclosure	Date of non-written disclosure (day/month/year)	Date of written disclosure referring to non-written disclosure (day/month/year)

## Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of Box V: 1

- Document 8: JP, 53-146557, A (Nippon Telegraph and Telephone Corporation), December 20, 1978 (12.20.78), Full text, Figs. 1-8 (Family: none)
- Document 9: JP, 57-55321, B2 (Nippon Telegraph and Telephone Corporation), November 24, 1982 (11.24.82), Full text, Figs. 1-8 (Family: none)
- Document 10: JP, 2001-68919, A (DX Antenna Co., Ltd.), March 16, 2001 (03.16.01), Full text, Figs. 1-11 (Family: none)
- Document 11: JP, 5-308220, A (Mitsubishi Electric Corporation), November 19, 1993 (11.19.93), Full text, Figs. 1-4 (Family: none)
- Document 12: JP, 59-94902, A (NEC Corporation), May 31, 1984 (05.31.84), Full text, Figs. 1-12 (Family: none)
- The inventions relating to claims 1-4, 6 and 8 do not appear to involve an inventive step based on documents 1-9. Documents 1-4 describe an antenna device comprising a hemispheric dielectric lens, reflector lens, and a plurality of first radiators and an antenna device comprising a spherical dielectric lens and a plurality of first radiators. Further, the technology of loading dielectrics in horn openings of the first radiators is well known as described in, for example, documents 5-9 etc.; therefore, the technology of unevenly distributing the tip center of the dielectrics from a wavelength axis to freely change a radiation pattern is also well known as described in documents 8 and 9 etc. The dielectrics shape is a matter that could be designed as appropriate by a party skilled in the art in view of a desired directional pattern and the like.
- The invention relating to claim 7 does not appear to involve an inventive step based on documents 1-12. For example, documents 10-12 describe a plurality of first radiators having an elliptical shape arranged in an opening. Also, documents 10 and 12 describe forming an opening in an elliptical shape so as to arrange the first radiators adjacent to one another.